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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,865	05/10/2001	Bradley M. Hiben	CM04756H	5153
22917	7590	12/19/2003	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			LEE, JOHN J	
			ART UNIT	PAPER NUMBER
			2684	10
DATE MAILED: 12/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/852,865

Applicant(s)

HIBEN ET AL.

Examiner

JOHN J LEE

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Applicant's arguments with respect to claims 1 – 22 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 – 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rezaiifar et al. (US Patent number 6,526,030) in view of Cioffi et al. (US Patent number 5,838,799).

Regarding **claim 1**, Rezaiifar discloses that a method comprising a receiving device (5 in Fig. 2) performing the steps (see Fig. 2). Rezaiifar teaches that receiving a multi-carrier signal (50 in Fig. 2) comprising a plurality of sub-channels (Fig. 3), wherein each sub-channel of the plurality of sub-channels occupies a discrete frequency band (Fig. 3 teaches a plurality of sub-channels and inherently each sub-channel having a designated discrete frequency band as like FM or AM frequency band). Rezaiifar teaches that operating in a first decoding mode (Fig. 7A) to decode one or more sub-channels (Fig. 3) of the plurality of sub-channels, thereby yielding control information (Fig. 7 and column 14, lines 25 – column 15, lines 28, where teaches the remote station finishes decoding the forward link control channel frame that including control information

within the control frame). Rezaiifar teaches that if the control information includes indicia of payload directed to the receiving device (6 in Fig. 2), operating in a second decoding mode to decode one or more additional sub-channels (supplemental channel in Fig. 3) of the plurality of sub-channels, thereby yielding payload (traffic channel in Fig. 8A) information (Fig. 8 and column 15, lines 29 – column 16, lines 27, where teaches if the control frame on the control channel to indicate an frame of traffic information received by remote station, remote station brought back to traffic channel mode and operates decoding traffic information).

Rezaiifar does not specifically disclose the limitation “multi-carrier signal comprising a plurality of sub-channels, wherein each sub-channel of the plurality of sub-channels occupies a discrete frequency band”. However, Cioffi discloses the limitation “multi-carrier signal comprising a plurality of sub-channels, wherein each sub-channel of the plurality of sub-channels occupies a discrete frequency band” (see Fig. 12, lines 2 – 19 and Fig. 5, 6, where teaches multi-carrier signal comprises a plurality of sub-channels and each sub-channel having a designated frequency band). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Rezaiifar system as taught by Cioffi. The motivation does so would be to achieve quality reception for digital multi-carrier signal in mobile communication system.

Regarding **claim 2**, Rezaiifar discloses that in the first decoding mode, the receiving device decodes the one or more sub-channels of the plurality of sub-channels, thereby further yielding payload information (Fig. 8 and column 15, lines 29 – column 16, lines 27).

Regarding **claim 3**, Rezaiifar discloses that in the first decoding mode, the receiving device decodes only the one or more sub-channels of the plurality of sub-channels, which yield control information (Fig. 7 and column 14, lines 25 – column 15, lines 28).

Regarding **claim 4**, Rezaiifar discloses that in the second decoding mode, the receiving device decodes the one or more sub-channels of the plurality of sub-channels, which yield control information and the one or more additional sub-channels of the plurality of sub-channels, which yield payload information (Fig. 7, 8 and column 14, lines 25 – column 16, lines 27).

Regarding **claim 5**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claim 1. Furthermore, Rezaiifar further discloses that transmitting a multi-carrier comprising  $M$  sub-channels (Fig. 3) spanning a bandwidth  $B_M$  (data rate) (Fig. 7, 8 and column 15, lines 8 – 64, where teaches base station assigns data rate to each of the carriers to support remote station). Rezaiifar teaches that transmitting control information, in one or more control sub-channels of the  $M$  sub-channels occupying a first portion of the bandwidth  $B_M$  (Fig. 7D and column 15, lines 8 – 64, where Fig. 7D teaches base station assigns data rates to each carrier in first frame).

Regarding **claim 6**, Rezaiifar discloses that the sending device is a base station (4 in Fig. 2) and a receiving device (6 in Fig. 2) is a radio communication unit (Fig. 2 teaches base station transmits signal to mobile station).

Regarding **claim 7**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claim 1.

Regarding **claim 8**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 3.

Regarding **claim 9**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 5. Furthermore, Rezaiifar further discloses that sending the payload information to the receiving device in one or more payload sub-channels of the  $M$  sub-channels occupying a second portion of the bandwidth  $B_M$  (Fig. 7D and column 15, lines 8 – 64, where Fig. 7D teaches control frame containing rates for each carrier is transmitted).

Regarding **claim 10**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 5.

Regarding **claim 11**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 9. Furthermore, Rezaiifar further discloses that decoding the payload sub-channels comprises the receiving device decoding the full bandwidth  $B_M$  (Fig. 7, 8 and column 15, lines 8 – column 16, lines 27).

Regarding **claim 12**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 5.

Regarding **claim 13**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 9. Furthermore, Rezaiifar further discloses that determining, by the sending device, if the payload information can be communicated via the control sub-channels (Fig. 7, 8 and column 15, lines 8 – column 16, lines 27). Rezaiifar teaches that if the payload information can be communicated via the control sub-channels,

sending the payload information to the receiving device via the one or more control sub-channels (Fig. 7, 8 and column 15, lines 8 – column 16, lines 27).

Regarding **claim 14**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 5.

Regarding **claim 15**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 8.

Regarding **claim 16**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 9.

Regarding **claim 17**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 10.

Regarding **claim 18**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 11.

Regarding **claim 19**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 12.

Regarding **claim 20**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 5.

Regarding **claim 21**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 3.

Regarding **claim 22**, Rezaiifar and Cioffi disclose all the limitation, as discussed in claims 1 and 4.

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al. (US Patent number 6,539,050) discloses Method for Transmitting Wideband Signals via a Communication System Adapted for Narrow-Band Signal Transmission.

Padovani et al. (US Patent number 6,574,211) discloses High Rate Packet Data Transmission.



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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(703) 306-5936**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on **(703) 308-7745**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L  
December 3, 2003

John J Lee

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**